CLAIMS

What is claimed is:

5   1. A distributed database system comprising:

a database administration apparatus, which administers a database allocated on network;

a topology administration server for distributing database of said database administration apparatus, and

10   a plurality of computers, which are allocated in an administration domain administered on network by said topology administration server; wherein

said topology administration server comprises:

storage for topology information, which stores topology information,

15   including certain information correlating a database object identifier, which is information for identifying a database object administered by said database administration apparatus, with an identifier of a database administration apparatus for identifying a database administration apparatus administering the database object;

20   a receiver for a cache request, which receives a cache request including said database object identifier transmitted from at least one or more of said computers for caching a database object identified by said database object identifiers;

an acquisition unit for an identifier of a database administration

25   apparatus, which acquires a corresponding identifier of a database administration apparatus from said storage for topology information based

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on the database object identifier included in the cache request received by said receiver for a cache request;

a transferring unit for a cache request, which transfers said cache request to the database administration apparatus identified by the identifier

5   of the database administration apparatus, in which said identifier is acquired by said acquisition unit for an identifier of a database administration apparatus;

said computer comprises:

a transmitter for a cache request, which transfers a cache request,

10   a receiver for a database object, which receives the database object returned in accordance with the transmission of the cache request by said transmitter for a cache request; and

a caching unit for a database object, which caches a database object received by the receiver for a database object; and

15   said database administration apparatus comprises:

a receiver for a cache request, which receives the cache request transferred by the topology administration server, and

a copy and transmission unit for a database object, which copies and transmits the database object in accordance with the cache request received

20   by the receiver for a cache request.

2. The distributed database system according to Claim 1, wherein said computer comprises a program receiver, which receives a program for performing computation while referring to a database object cached in the

25   caching unit for a database object.

3. The distributed database system according to Claim 1 or 2, wherein said computer comprises a detection unit for computational load, which detects the computational load thereof; and a transmitter for a cache request, which transmits a cache request based on the computational load detected by
5   the detection unit for computational load.

4. The distributed database system according to Claim 1 or 2, wherein the transmitter for a cache request transmits a cache request upon starting a computer.
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5. The distributed database system according to Claim 1 or 2, wherein the cache request includes information relating to capacities and data types of database objects cacheable by the caching unit for a database object.

1 5   6. The distributed database system according to Claim 1 or 2, wherein the cache request includes information relating to time slots during which the caching unit for a database object can cache a database object.

7. The distributed database system according to Claim 1 or 2, wherein
2 0   the cache request includes information relating to computational capacity of a computer.

8. The distributed database system according to Claim 1 or 2, wherein the cache request includes information relating to consideration for caching
2 5   a database object by a computer.

9. The distributed database system according to Claim 1, wherein the topology information further correlates an identifier for a computer, in which a database object is cached, with a database object identifier; and

5   said topology administration server comprises:

a receiver for cache-completed information, which receives cache-completed information, which is information indicating caching of the database object to the computer,

a cache updating unit for topology information, which updates the
10 cache-completed information of topology information stored in the storage for topology information to the current status based on the cache-completed information received by the receiver for cache-completed information.

10. The distributed database system according to Claim 9, wherein
15   said topology information correlates lock information relating to a lock, which is operated by a database object, with a database object identifier; and

said topology administration server comprises:

a receiver for lock-operation information, which receives the lock
20 information,

a lock updating unit for topology information, which updates lock information of topology information, which is stored in the storage for topology information, to the current status based on the lock information received by the receiver for lock-operation information.

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11. The distributed database system according to Claim 9 or 10,

having a plurality of said topology administration servers, wherein said topology administration server comprises:

an exchanging unit for topology information, which exchanges topology information with the other topology administration server

5   administrating the other administration domain communicable via network.

12. The distributed database system according to Claim 2 or 9, wherein said database administration apparatus comprises:

a transmitter for an update-operation instruction, which transmits an

10   update-operation instruction, which is an instruction for update-operation of a database object, to a client apparatus of a computer caching the database object upon executing the update-operation with respect to the database object held therein; and

said computer comprises:

15   a receiver for an update-operation instruction, which receives an update-operation instruction, and

an update-operation unit for a database object, which updates the database object cached in the caching unit for a database object based on the update-operation instruction received by the receiver for an

20   update-operation instruction.

13. The distributed database system according to Claim 2 or 9, wherein said database administration apparatus comprises:

a receiver for update-operation information, which receives

25   update-operation information relating to the update-operation on a database object,

an update-operation unit, which executes the update-operation on the database object held therein based on the update-operation information received by the receiver for update-operation information, and

a transmitter for an update-operation instruction, which transmits an update-operation instruction of a cached database object to a client apparatus of a computer caching the database object based on said update-operation information; and

said computer comprises:

a transmitter for update-operation information, which transmits update-operation information,

a receiver for an update-operation instruction, which transmits an update-operation instruction, and

an update-operation unit for a database object, which updates the database object cached by the caching unit for a database object based on the update-operation instruction received by the receiver for an update-operation instruction.

14. The distributed database system according to Claim 1, which further comprises:

a journal administration server comprising:

a receiver for a journal, which receives a journal indicating an update on a database object administered by said database administration apparatus,

storage for a journal, which stores a journal received by the receiver for a journal,

a replay unit for a journal, which replays the journal stored by the storage for a journal,

a storing unit for a snapshot, which stores a snapshot generated based on the journal replayed by said replay unit for a journal, and

a recovery unit having a function for executing processes for recovery of a domain in failure from said snapshot upon suffering a domain

5   failure; and

said database administration apparatus comprises:

a transmitter for a journal, which transmits the journal.